

463384

Robert Sanchez
02/22/2002 09:30 AM

To: Louis Fournier <starcompany@erols.com>
Subject: Re: Galaxy/Spectron Site

Sorry for the duplicate msg.

We feel that horizontal wells will be ineffective in getting to the contamination sitting above the low permeability layer. Show me something that supports your point that while a low permeability can stop water air can pass through it. I am trying to contact EPA in ADA OK also.

Robert Sanchez, Remedial Project Manager
US EPA Region III, 3HS23
1650 Arch Street
Philadelphia, PA 19103-2029
Office (215)814-3451
Fax (215)814-3002
email "sanchez.robert@epa.gov"
Louis Fournier <starcompany@erols.com>



Louis Fournier
<starcompany@erols.com>

To: Robert Sanchez/R3/USEPA/US@EPA
cc: mkluger@dajak.com
Subject: Re: Galaxy/Spectron Site

02/11/02 06:50 PM

Robert Sanchez, Remedial Project Manager
US EPA Region III, 3HS23
1650 Arch Street
Philadelphia, PA 19103-2029
Office (215)814-3451
Fax (215)814-3002
email "sanchez.robert@epa.gov"

Rob,

1. Peat has been around a long time for addition to above-ground bioreactors. It provides surface area for bacteria to grow on without adversely restricting flow through the reactor. It also has some sorption capacity for organic contaminants. In effect, it sorbs the contaminants onto the peat surface and gives the bacteria living on the surface a longer contact time and more opportunity to attack the contaminant. Powered activated carbon does the same thing. We used to add PAC to the large plant bioreactor system at Du Pont Chambers Works. In fact, Du Pont received a patent on the "PAC Process". This is non-useable for in situ bioremediation processes since we do not want to dig up the whole site to mix peat with the soil. In fact, the soil is doing the same exact thing that the peat would do. In petroleum hydrocarbon clean-up's the presence of a naturally-occurring peat layer can be detrimental to site remediation since it sorbs and holds onto contaminants thereby not allow them to dissolve easily into the groundwater and soil system.

2. We are working on two proposals. The first has 3 horizontal wells and propane injection and I have extended the O&M out to 5 years. The second is for a single horizontal well with propane injection and also

AR303083

extended to 5 years.

However, there may be another option you may want to consider--one of running a simple, single horizontal well system without propane injection for, say, a year. The benefit of this would be (1) to ascertain whether or not propane is necessary to achieve site remediation and (2) whether or not air sparging causes the emission of unacceptable odors at the site. Let me know what you think about this option.

3. I had trouble finding sites which were previously posted regarding co-metabolic biodegradation, especially work at the DOE Savannah River Site. I suspect that this is because many sites were taken down after Sept. 11th as a security measure. You can do a search on the three words: aerobic, cometabolic, and biodegradation to get lots of web site references. Alternatively, you can search for the DOE site at Savannah River. They have published lots of info on the subject. If you cannot find references on the internet, I'm sure that the EPA has its own resources. Here are a few for your use:

1. <http://www.solerex.com/newpages/cho-mgrs.html>
Talks about lab work.
2. <http://ehpnet1.niehs.nih.gov/docs/1995/Suppl-5/semprini-abs.html>
University of Oregon research paper. Abstract only.
3. <http://www.gsi.ie/workgsi/groundwater/newslet/37/37-02.htm>
Discusses aerobic, anaerobic, and aerobic co-metabolic processes and mechanisms.
4. <http://stripe.colorado.edu/~bielefel/research.html>
University of Colorado research efforts.
5. <http://web.ead.anl.gov/TechCon/Public2/ShowCap.cfm?GetWhat=STAR%20Env.%20Group&Interest=PORT>
STAR Environmental submission to the DOE for the Portsmouth, OH site.
6. <http://www.gwrtac.org/html/external/situbio.htm>
A guide to EPA documents on bioremediation projects.
7. http://www.cmst.org/OTD/Profiles/VOCNA/In_Ground_Bioremed.html
A good over-view of work at the DOE Savannah River Laboratory related to aerobic, co-metabolic biodegradation.
8. http://www.frtr.gov/matrix2/section4/4_33.html
Good overview of aerobic, co-metabolic biodegradation process.
9. <http://pw2.netcom.com/%7elmdmit84/hzwells.html>
Specific information about the wells installed at the DOE Savannah River Labs site.
10. <http://bigisland.ttclients.com/frtr/00000047.html>
DOE Project Report: "In Situ Bioremediation Using Horizontal Wells at the U.S. Department of Energy's Savannah River Site, M Area, Aiken, South Carolina"

Lou

AR303084